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THE COLLECTION AND PREPARATION OF CAOUTCHOUC.

An interesting description of the collection and preparation of caoutchouc is given by Franz Keller in his work entitled "The Amazon and Madeira Rivers," from which we take the following:

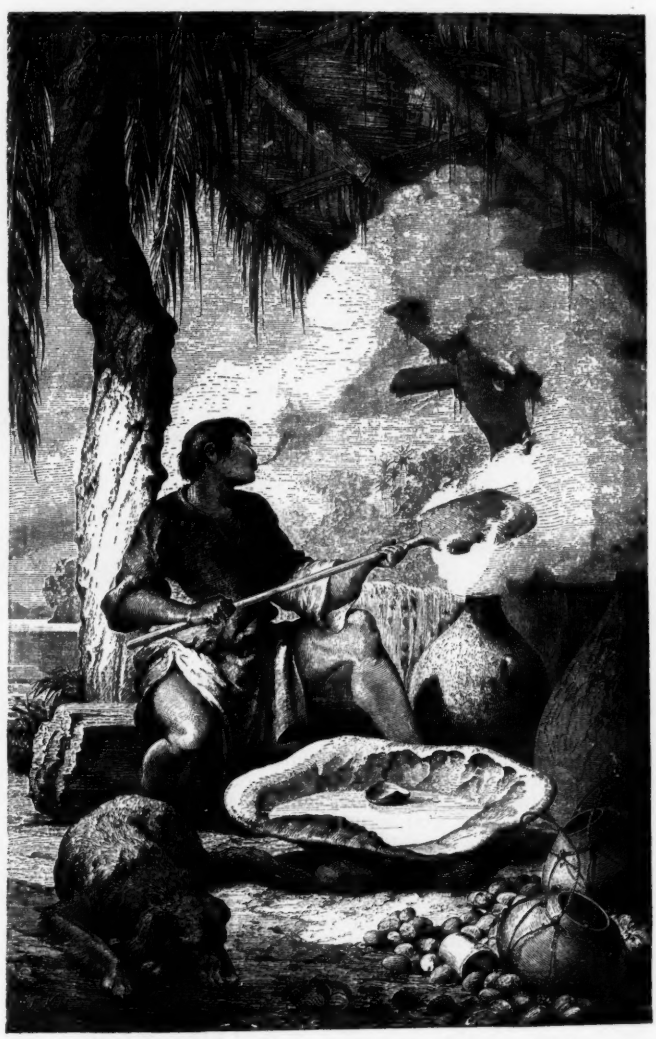
Near the Praia de Tamandua we acquainted ourselves with all the particulars respecting the collection and preparation of the caoutchouc, at the cottage of a Bolivian seringueiro, Don Domingo Leigne. The Siphonia grows, or at least thrives, only on a soil wherein its stem is annually submerged by the floods to the height of three feet or more. The best ground for it, therefore, is the igapó, the lowest and most recent deposit of the river; and there, in the immediate vicinity of the seringals, may be seen the low thatches of the gatherers' huts, wretched hovels mostly, rendered tenable during the inundations by the device of raising the floor on wooden piles of seven feet height, in which the canoe, the seringueiro's indispensable horse, also finds a protected harbor. Unenviable truly must be the life of the happy proprietor, who has nothing to do in the seringal during the wet season, and who then has ample leisure to calculate exactly the intervals between his fits of ague, and to let himself be devoured by carapanás, piums, motúcas, and mucuims—under which euphonious names are known some of the most terrible of insect pests.

Narrow paths lead from the cottage, through the dense underwood, to each separate tree; and as soon as the dry season sets in, the inmate of the palace just described betakes himself with his hatchet into the seringal to cut little holes in the bark. The milk-white sap immediately begins to exude into pieces of bamboo tied below, over little clay cups set under the gashes to prevent its trickling down the bark. The collector travels thus from trunk to trunk; and to facilitate operations, on his return visit he pours the contents of the bamboos into a large calabash provided with liana straps, which he empties at home into one of those large turtle-shells so auxiliary to housekeeping in these regions, serving as they do for troughs, basins, etc.

Without any delay he sets about the smoking process, as the resinous parts will separate after a while, and the quality of the rubber so become inferior. An earthen jar, without bottom and with a narrow neck, is set by way of chimney over a fire of dry urucury, or nauassú palm nuts, whose smoke alone, strange to say, has the effect of instantly coagulating the caoutchouc sap, which, in this state, greatly resembles rich cow's milk. The workman, sitting beside this "chimney," through which roll dense clouds of a smothering white smoke, from a small calabash pours a little of the milk on a sort of a light wooden shovel, always careful, by proper management of the latter, to distribute it evenly over the surface. Thrusting the shovel into the thick smoke over the opening of the jar, he turns it several times to and fro with great rapidity, when the milk is seen to consolidate and to take a grayish-yellow tinge.

Thus he puts layer upon layer, until at last the caoutchouc on both sides of the wood has reached about an inch in thickness, when he thinks the "plancha" ready. Cutting it on one side, he takes it off the shovel and suspends it in the sun to dry, as there is always some water between the several layers, which should, if possible, evaporate. A good workman is thus able to prepare five or six lbs. of solid seringa in an hour. The plancha, from its initial color of a clear silver-gray, turns shortly into a yellow, and finally becomes the well-known dark brown of the rubber such as it is exported.

The more uniform, the denser and freer of



INDIA-RUBBER MANUFACTURE ON THE BANKS OF THE MADEIRA.

DESCRIPTION OF ILLUSTRATIONS.

INITIAL.—Group of cipós (lianas) encircling a little palm.

PREPARATION OF THE INDIA RUBBER.—The workman, a Mojos Indian, holding his wooden shovel, covered with a fresh layer of milk, in the white smoke which issues out of the chimney-like pots from a fire of urucury, or nauassú palm-nuts (which alone consolidates the milk in the proper way), sits in the midst of his simple utensils; the nuts on the ground, the calabashes, and a cup of bamboo in which he fetched the milk from the seringal, to pour it into the turtle-shell in the middle.

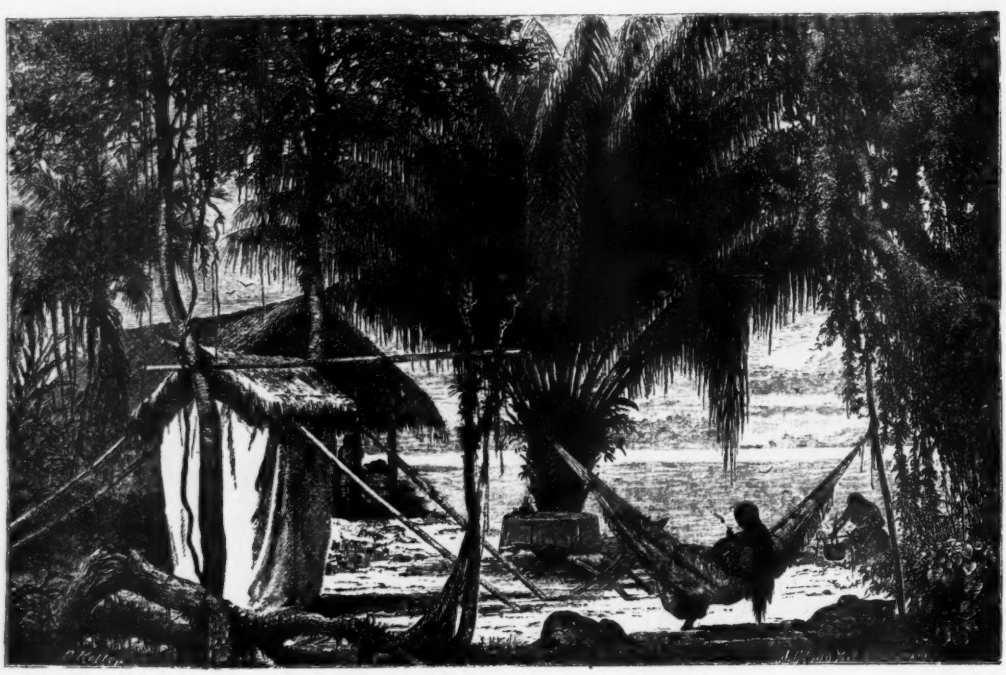
A SERINGUEIRO'S FIRST SETTLEMENT ON THE MADEIRA.—On the high shore, but in the immediate vicinity of the moist seringals (caoutchouc-tree woods), the first household arrangements are made. The richly embroidered hammock is extended between two trees, and a dense mosquiteiro is spread over another, serving for the night, and shaded with a light roof. Immediately to the right is the kitchen, with a tartaruga (turtle), that most patient of all animals, which, simply laid on its back, helplessly and noiselessly awaits the fatal stroke. In the foreground the temporary wife of the owner, a young mestizo lady, with raven-black hair, comfortably smokes her cigar, rocking herself leisurely in the hammock.

HOUSE OF A RICH SERINGUEIRO.—In the middle the palm-leaf covered house; in the foreground, to the right, a group of the banana da terra (pacova), or indigenous plantain, a large bunch of whose yellow fruit an Indian is taking to the kitchen.

bubbles the whole mass is found to be, the better is its quality and the higher the price it fetches. Almost double the value is obtained for the first-rate article over that of the most inferior quality, the so-called seruamby or cabeça de negro (negro's head), which is nothing but the drops collected at the foot of the trees, with the remains of the milk scraped out of the bottoms of the calabashes. The rubber of India is said to be much like this seruamby, and, like it, to be mixed with sand and small pieces of bark. By way of testing the quality, every plancha is cut through again at Pará; by which means discovery is made, not only of the bubbles, but also of any adulteration that might be effected with the milk of the mangaba, that fine plant with dark glossy leaves, now found so often as house plants under the erroneous name of rubber-plant.

Native Indian Signboards.

A WRITER in the *Times of India* has been investigating the native quarters of one of the great Indian cities, for the purpose of making merry on the way in which native shopkeepers air their knowledge of the English language in the business announcements over their shops, and his peregrinations have been rewarded by a large crop of oddities. A Goanese trader announces on a very prominent signboard that "chiroots and cigarettes fresh fry mutton things will be got here," while a rival shopkeeper describes himself as a "tea puddin ice-cream bayeef orburing robe aneer and retail seller." Yet another storekeeper intimates that he keeps in stock "profitable Benares conserve of the hog plum." Further on an announcement runs: "The shop No. 13 in the name of T. D. Veerjee, cloth merchant, conducted by T. Giga Nuthoo. No tricks shall be played even towards a boy or a man of common sense. In case if the cloth is returned, being unsuited, its value shall be paid back and terms cash." Hakim Syed is a "Rumlee Juffree and astrologer," and Essajee a "plumber dranpipe and drang builder in new system." The oddest announcements of all are those of persons connected with the medical profession or the drug trade—Mr. Dhodee Chundrojee, for instance, having appropriated the title of "oculi et auris chirwig"; and a board on a charitable dispensary announcing that the institution is "for poor only and oculist." A similar institution is the "Cheapest Medical Dispensary has been opened for the benefit of the persons of small sum, and poor salary." "Syed Khoja Kurindinsha Chisliti, generation of Syed Khoja Mohidin Chisti, inhabitant of Ajmere, now wishes to *celebrate*, which he has been offerded from his master, to cure the patient demon, magic devils, etc., or any short of patient to whom doctors cannot cure the patient should attend here he will be cured by the favor of God." A certain other Syed calls attention to the fact that he "can cure every kind of disease particularly the seven kinds of fites, etc." A lady rejoicing in the name of Vurzeebeebee states her calling as a "nurse mediceon of any sickness for man and womans, and bone settler." A native chemist's signboard runs as under: "Nuthoo Ramjee, candee shop is very good and cheap medicine to be had at any time."



FIRST SETTLEMENT OF AN INDIA-RUBBER COLLECTOR (MADEIRA).

What is an Adulteration in Pharmacy?*

BY J. U. LLOYD.

ON first thought, this query would appear to admit of but one answer, and that to the effect that the nature of an adulteration in theory can be easily determined. Upon the contrary, there are connected matters which in the State of Ohio reach into the subject, and some of our members may be interested in studying them in these directions. We do not need to be told that to mix water with alcohol, alcohol with sulphuric ether, sulphuric ether with chloroform, and so on, selling each as a full-strength preparation, is typical of adulteration. An imposition is then practised on the innocent purchaser, an intentional deception and debasement for the gain that results to the admixer.

Wherever we turn in the matter, whether it be in powders or liquids, the rule holds good and needs no further consideration from us, as the facts of intentional debasement of a substance for unearned gain are too well understood to demand explanation.

It is perhaps not so well known that persons of the utmost integrity may unconsciously and innocently adulterate in certain directions, in the eyes of the law; and unquestionably it will surprise many perfectly honorable persons to learn that technically they are now guilty of adulterating, and might perhaps legally be classed with intentional mixers for gain. Really, a deviation from a recognized standard, regardless of the selling or cost price of the preparation, may constitute an adulteration. The selling, under the pharmacopœial name, of a substance differing from that of the Pharmacopœia, regardless of the expense to the maker, is, in Ohio, made by special definition an adulteration; and what prominent manufacturer does not send products to this State?

ADULTERATION LAW OF OHIO.

SEC. 2. The term "drug," as used in this act, shall include all medicines for external or internal use, antiseptics, disinfectants, and cosmetics. The term "food," as used herein, shall include all articles used for food or drink by man, whether simple, mixed, or compound.

SEC. 3. An article shall be deemed to be adulterated within the meaning of this act:

(*a*) In the case of drugs: (1) If, when sold under or by a name recognized in the United States Pharmacopœia, it differs from the standard of strength, quality, or purity laid down therein; (2) if, when sold under or by a name not recognized by the United States Pharmacopœia, but which is found in some other pharmacopœia, or other standard work on materia medica, it differs materially from the standard of strength, quality, or purity laid down in such work; (3) if its strength, quality, or purity falls below the professed standard under which it is sold.

* Written by request of Mr. A. Robinson McIlvaine, chairman of the Committee of Adulteration and Sophistication, National Wholesale Drug Association, 1889. Read at the annual meeting at Indianapolis, October 22d.

This, therefore, brings jobbers and wholesale manufacturers nearer to the U. S. P. than they had perhaps heretofore supposed themselves; in Ohio, at least, it is by law made the standard that all dealers in medicine must bow before. Every ten years the U. S. P. is revised, and with each revision, in order to avoid becoming criminals in the eyes of the law, those who now sell their manufactures in Ohio, as plainly stated in our adulteration law, must, as I see the subject, discard their old stocks and make their processes for officinal preparations conform to the U. S. P., if they name them by the officinal title.

This law goes further: not only are we compelled to conform to the U. S. P. standard, but we cannot use the U. S. P. title qualified by explanations so as to show that a preparation of other strength is represented. For example, we cannot use the term "fluid extract of arnica" on a preparation of different nature or strength than the officinal, even though we explain on the label that this is *not U. S. P.* Neither, as I see the matter, can we use any U. S. P. title for a similar preparation that is named in a foreign pharmacopœia, even if we should distinctly state this fact. For example, the statutes of Ohio actually *forbid* us making and selling *infusion of digitalis, Pharm. Germ.*, because the U. S. P. recognizes infusion of digitalis of a different strength (see Ohio law, section 3, *a* (1).)

However just this ruling may generally be in one sense, it appears in other directions oppressive. Take, for example, a drug *introduced* originally by a certain manufacturer, in fluid-extract form, to oblige a physician who is the only person using it. The physician commends it to his professional friends; the manufacturers finally advertise it extensively. A general demand arises, and it becomes of sufficient interest to be made officinal. The committee of revision of the U. S. P. then recognizes the necessity for a similar article, and adopts a menstruum that is different from that employed in the preparation that made the demand (the officinal may actually be inferior from inexperience of the committee with this one drug). It becomes officinal, but as it is established by the U. S. P. is a very different substance from the liquid that gave the reputation to the drug. Physicians who formerly employed it may even object to the new (officinal) preparation, which in reality is designed as a substitute for the genuine, and demand the original; and yet this genuine has really become an adulteration, in the eyes of the law, and cannot be sold under the general name in Ohio. The original maker and introducer must disturb his business, alter his process, and perhaps enter into a world of explanations to complaining patrons, if he drop the original formula and recognize the U. S. P. process, as he should do if possible. If he does not do this, he is guilty of adulteration, according to my construction of the laws of Ohio, and would possibly be held for irregularity elsewhere if accident followed.

That this simile as regards change in product is not overdrawn is evident from the continued experience of various manufacturers of pharmaceutical preparations in this direction, who, however, probably believe that, unless their preparations are labelled U. S. P., they have a right to deviate from the standard established by that work.

It is well known that the U. S. P. is not an originator but a follower. Irregular preparations come into demand through individual exertion; physicians prescribe certain of them, and at last the committee of the U. S. P. recognizes their importance. A process is adopted for making them, and thus, although the officinal product may be in many respects dissimilar from the original preparation, it is legally established as the standard.

This is not all of the problem with which we have to contend in the matter of deviation officinally, for subsequent revisions of the U. S. P. may materially alter the formulæ of those preceding (indeed, the most do so), and this necessitates a periodic disturbance of the manufacturers' business. A more sensitive barometer than the change in appearance of a medicine can scarcely be suggested, and all persons connected with manufacturing interests realize that the necessary changes that are made in the formulæ and methods of the U. S. P. tend naturally to create more than a little disturbance in the manufacturers' field.* The apothecary, with his limited personal trade, can easily explain these differences to his patrons, the change from old to new is usually easily accomplished with him; but the customers of a manufacturer are scattered over the entire country, and only manufacturers realize the aggravations that follow the disturbances of this nature. It seems just, therefore, that a period of time should be established whereby old stocks may be exhausted, in order to permit products of the old process to be exhausted and changes familiarized before compelling us to replace with the new. This may perhaps properly be done by amendments to the law of this and perhaps other States, or even, if necessary, by a clause in the U. S. P. establishing the date at which the new revision shall go into legal and permanent effect in order to meet such cases as the one under consideration.†

HOUSE OF A WEALTHY INDIA-RUBBER COLLECTOR (Lower Madeira).

In this connection, the question arises, Can the U. S. P. control the names of substances introduced by an individual or a firm, or that have been evolved by a long series of years in commercial affairs, and affix those names to different materials, and thus cast the odium of adulteration upon the original preparation?‡ That excellent authorities have maintained their right to personal methods, in which products under the officinal appellation differ from the officinal, is evident, and some do so yet. When the U. S. P. appeared in 1870, no less an authority than Dr. Squibb§ rebelled against many of its prepara-

* Do not infer that this is an adverse criticism of the U. S. P. Upon the contrary, all persons recognize the necessity of these ten-year alterations in that work, and I consider this publication, especially its last issue, as an upward evolution in a work that we may take pride in praising.

† Credit for this opinion should be extended an able reviewer of this paper, whose name I do not feel at liberty to divulge, but whose judgment I would unhesitatingly accept in all matters connected with the subject under consideration.

‡ The U. S. P. committee, as I view the matter, have never absorbed a private proprietary name; at least I have no knowledge of such act. Strictly scientific appellations are used with all preparations in that work, or at least names explanatory of the substance designated. Manufacturers and others who have established fanciful names, and created a personal demand for preparations under such ownership titles, will probably support this view. I doubt if any man has cause to criticise the work in this direction, or if any firm can view the course of the U. S. P. committee in other than admiration at their respect for the rights of individuals.

§ I do not hesitate to assume that this unimpeachable authority uses the term U. S. P. *only* when a preparation is made in exact conformity with that

tions. To use his words respecting the fluid extracts of U. S. P. 1870:—*

> "They have not only substituted glycerin for the sugar in the 10 old fluid extracts which contained sugar, but have introduced it into 7 of the remaining 14 old fluid extracts after ten years' experience had proved it unnecessary, leaving now only 7 of the original 24 without it. Then the committee introduce 22 new fluid extracts, 17 of which contain glycerin, thus making a total of 46, of which the large proportion of 34 contain glycerin. This new officinal feature will not probably be generally followed, and should not, and the Pharmacopœia will have to be satisfied with that degree of loyalty which adopts its now uniform strength for fluid extracts, whereby each minim represents a grain of the drug from which it is made."

It is now nearly twenty years since that day, and there has been a continuous trend towards centralization in State laws that govern druggists. What was possible then is impracticable now. The privileges of the individual have been circumscribed, and in business matters we, as individuals, must bow to modern laws passed avowedly in the interest of the multitude. To take the stand that Dr. Squibb held then would now be an act of open defiance of the statutes of the State of Ohio, should the subject come to issue, and possibly of other States. I, for one, agree with him concerning the justice of his decision at that time. I believe that his studious experience as a manufacturer was such as to justify him in protesting openly against the glycerin craze of the pharmacopœial committee of 1870. Subsequent revisions of the U. S. P. show that he was right, and yet, as I see the matter now, we defy the positive wording of the law at this day if we use our individual experiences and replace a U. S. P. formula with a better one, or retain an original process in the face of one officinal, if we sell our products in Ohio under the officinal name, even if we should distinctly state that this is *not* U. S. P.

It may occur to some persons to argue that if real improvement of product results from such individual labor, there could be no objection to a deviation in that direction, and that the improved substance could not be adversely decided against. Upon the contrary, if the U. S. P. process yields a defective preparation, this preparation establishes its dose and use in therapy, and to substitute an irregular, stronger one might really, with some drugs, prove a serious matter. If it could be shown that the U. S. P. preparation was the legal one (as our Ohio statutes establish it) and would have been harmless, it is possible that in case of toxic action the dispenser or maker of a more energetic one who uses the officinal name simply (without the U. S. P.) would be held responsible for its action, even without a positive statute such as we have in Ohio.†

From a consideration of this subject I am led to accept that a deliberate alteration of a pharmacopœial preparation, if the preparation be sold in Ohio under the officinal title, is an adulteration in pharmacy, regardless of the value or the cost of the material, and I do not know but that law would support it elsewhere. Even if the maker is actuated by the highest motives and produces a better preparation than the officinal, selling it even at a loss in money to himself, the use of the officinal name makes (he need not say U. S. P. on the label) it an irregular preparation.‡

I am quite sure that many manufacturers do not realize their responsibilities in these directions. We have generally considered in trade that adulteration is practised only for unfair purposes, and many have accepted that it must always be an act intended to cheapen a substance. Those who make pharmacopœial preparations may, however, it seems to me, rest assured that the money value of a preparation is not a consideration in this law; that the maker of a double strength "tincture of opium," sold under that name, is responsible alike with the one who makes the half strength—indeed, that the former act might become more serious than the latter.

Owing to the fact that many members of this Society are now engaged in manufacturing fluid extracts and other preparations on a large scale, that the jobber is rapidly becoming a producer and not a mere handler, I take the liberty to present this paper, feeling that the ideas suggested may be kindly received and of value to some of our members.

In addition thereto I would suggest that, as manufacturers of officinal preparations and of irregular preparations that are about to become officinal, perhaps through our energies, we should, whenever possible, lend a helping hand to the revisers of the Pharmacopœia. Our experiences in many directions are far greater than those of any member of the committee of revision of the Pharmacopœia, and I speak advisedly when I say that our aid will often be thankfully received by these gentlemen, and, I believe, will surely deflect immature processes when special preparations, that we are from large experience expert in making, earn such positions in the eyes of the country as to demand their officinal recognition. Our co-operation may also serve in introducing, *at the start*, formulæ of such perfection as to permit them to remain unchanged from decade to decade as the work is revised.

As a partial answer, then, to "What is an adulteration in pharmacy?" I reply, in the eyes of the laws of my State, a deviation from the *standard* established by the Pharmacopœia of the United States will probably come under that head if the preparation be sold under the pharmacopœial title, regardless of the strength, value, cost, or selling price, and irrespective of dictionary definition of the word adulterate. That this may seem a harsh ruling to many who have devised special processes and an extensive trade for preparations that in a very different condition subsequently become officinal, cannot be more apparent to, or bear harder on, others of this Association than on the writer, to whom has been awarded the subject of which this communication is a partial answer.§

Separate Estimation of Strychnine and Brucine in Nux Vomica.

At the late meeting of the German Naturalists and Physicians at Heidelberg, Prof. H. Beckurts read a paper on a method for separately determining strychnine and brucine in nux vomica. The following abstract is from the *Chem. Centralblatt*:

The author had already previously pointed out a method for separating strychnine and brucine, which consisted in precipitating the former, in a solution acidulated with hydrochloric acid, as ferrocyanide ($C_{21}H_{22}N_2O_2.H_4FeCy_6$), the corresponding brucine solution being soluble. The determination may be conducted volumetrically, and the results are satisfactory. Kremel has examined this method, and has likewise declared it satisfactory. But he reports having found in an extract 7.3 per cent of strychnine and 14.28 per cent of brucine, which proportions do not agree with the results obtained by the author. The latter therefore requested Mr. Holst to investigate this point. The alkaloids were separated in the usual manner by shaking with chloroform, the residue converted into salts by adding a sufficient but measured quantity of $\frac{1}{10}$ normal hydrochloric acid, and the excess of acid determined by titration with $\frac{1}{100}$ normal alkali. This gave the total alkaloids. They were, however, not pure enough to serve for the final treatment with ferrocyanide. Hence the solution was again evaporated with addition of ammonia, the residue extracted with alcohol, this solution again evaporated, and finally extracted with chloroform. The latter having been evaporated, the total quantity of alkaloids was determined as before; next the liquid was acidulated with hydrochloric acid and precipitated with a volumetric solution of ferrocyanide.

This method, then, permits the determination of the total alkaloids (strychnine and brucine). Moreover, by its use, the relation of the alkaloids in the nux vomica, or extract, is not altered by it. In five extracts this relation varied as follows:

Amount of strychnine .....42 to 54 per cent.
" " brucine.....58 to 46 per cent.

Note by Ed. Am. Drugg.—The volumetric solution of ferrocyanide of potassium spoken of above is to be prepared (according to Beckurts) by dissolving 10 Gm. of the salt in distilled water to make 1 liter. Since the reaction which takes place between this salt and the strychnine is in the proportion of 422 parts of ferrocyanide of potassium to 334 of strychnine, it follows that each cubic centimeter of the above-mentioned volumetric solution, which contains 0.01 Gm. of ferrocyanide, corresponds to 0.0079147 Gm. of strychnine.

The reaction is as follows:

$$\underset{\text{strychnine}}{C_{21}H_{22}N_2O_2} + \underset{\text{hydrochloric acid}}{4HCl} + \underset{\text{ferrocyanide potassium}}{K_4FeCy_6} + Aq. =$$

$$= \underset{\text{ferrocyanide of strychnine}}{C_{21}H_{22}N_2O_2.H_4FeCy_6} + \underset{\text{potassium chloride.}}{4KCl} + Aq.$$

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publication, and that any preparation bearing his label is unquestionably as represented. However, Dr. Squibb, in 1873, maintained his right to a certain amount of liberty which, if exercised now, would, by the inflexible definition of the Ohio Adulteration Law, place him among persons who debase their products for gain. Be it said for Dr. Squibb that he has no proprietary preparations and no private processes, and I think facts are stated beyond contradiction. For this reason, perhaps, he is in a better position to maintain his stand than some of us, who maintain an ownership right in methods and processes earned by labor, thought, and expense—a right of property that I, for one, maintain is just and a birthright.

* New York Medical Journal, April, 1873.

† The late Professor W. B. Chapman, when a judge at the Cincinnati Industrial Exposition, informed the writer that he would decide more forcibly against toxic preparations made stronger than the U. S. P. required than against those weaker, upon the ground that injury from overdose was a more serious matter than underdosing.

‡ The query arises, "an the preparation of a drug be *adulterated* with another portion of itself thereby intensifying its action instead of debasing? According to the Ohio laws, which give a special definition, if any preparation deviates from the *standard* of the U. S. P. it is *adulterated*. The definition of the word *adulterate* in our dictionaries seems to me, however, to refer to a *debased* material.

§ In my opinion, it would neither be expected by the profession of medicine nor desired by the revision committee that methods of manipulation that give a manufacturer's wares a deserved superiority over that of a competitor should be divulged to his injury. My views of this problem are too plainly recorded to permit of such a construction. Liberality in a general sense tends to advance the interests of all concerned, and, it seems to me now as it has heretofore, can often be exhibited on the part of those of our members who do not depend on specialties only, with benefit rather than injury to themselves. Some of our members may think that the jobber and the United States Pharmacopœia are out of sight of each other. I believe that men who select and distribute *all* the drugs for this nation are interested in the standard of the nation.

PHARMACEUTICAL MACHINES.

THE correspondent of the *Chemist and Druggist* describes a number of appliances, exhibited at the Paris Exhibition, of use to pharmacists, some of which are mentioned below. They are chiefly adapted to manufacturing on a large scale, but are of general interest.

POWDERING MACHINE.

Beyer Bros., 16 and 18 Rue de Lorraine, Paris, showed a triturating machine, to be driven by hand or steam, costing in the neighborhood of $200, and shown in the adjoining figure. The cams not only raise the pestles, but may cause them to revolve, and the escape of the drug during the operation is prevented by the rubber jacket shown on the left of the two mortars. It is said that a large number of these machines are already in use in Parisian laboratories for the production of impalpable powders.

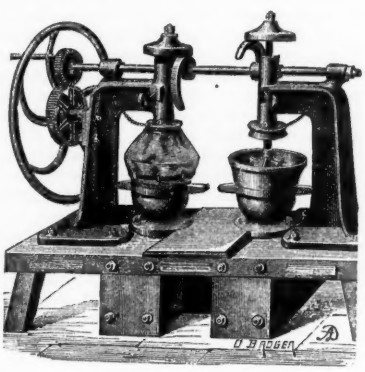
PILL-PRINTING MACHINE.

H. Nègre & Co., 57 Avenue du Main, and Patau, 43 Avenue du Main, Paris, make a machine for printing on pills which is about the size of a Morse telegraphic apparatus. The coated pills to be printed on are placed in the hopper, and from there pass through grooves which bring them under the printing rollers near the discharge spouts. The printing is done with ordinary printer's ink, and the impression may give the name of the maker, the name of the pill, or an abbreviated formula, as may be desired. This seems to be an improvement upon Vial's machine, described by us some years ago, in that it prints more pills in the same space of time.

Weighing and Packing Machine.

PILL-MAKING MACHINE.

Nègre & Co. also show a machine alleged to be capable of turning out 125 pounds of pills daily, and shown in the adjoining figure; but no description accompanies it, and the correspondent remarks upon the difficulty with which information was obtained from French exhibitors respecting the working of their machines.



Powdering Machine.

WEIGHING AND PACKING MACHINE.

Avery & Clauson's weighing and packing machine for powders, seeds, etc., is capable of weighing and filling many hundreds of packages per hour. The powder, or whatever it may be, is carried into the hopper, and from this it falls into the package below, so that, when the desired weight has gone in, the balance turns, and at the same time a long-arm lever brings a disc into the mouth of the hopper, which effectually closes it. Machines of this kind are now extensively used, and are made so that they can be worked by steam power, every part of the operation to the bringing-up of the packages being done by mechanism. In the one illustrated there is a combination of three packet-holders, each one of which affects the balance only when under the hopper.

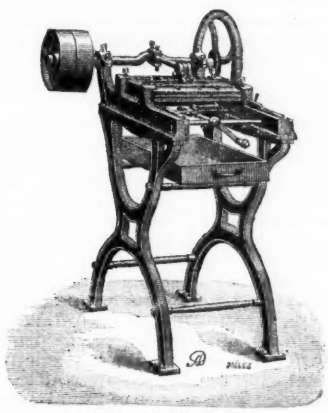
Supplement to the German Pharmacopœia. — The *Apotheker Verein* has resolved to undertake the publication of a supplement to the new Pharmacopœia, which will be edited by Dr. Vulpius, and which will correspond somewhat with the "National Formulary" of unofficial preparations of the American Pharmaceutical Association. It will contain particulars of all the latest chemicals and preparations of vegetable origin. The profits arising out of its publication are to be handed to the relatives of the recently deceased chemist, Schlickum, whose services in connection with the Pharmacopœia will thus be appropriately recognized.—*Chem. and Drugg.*

Examination and Preservation of Medical and Surgical Appliances.

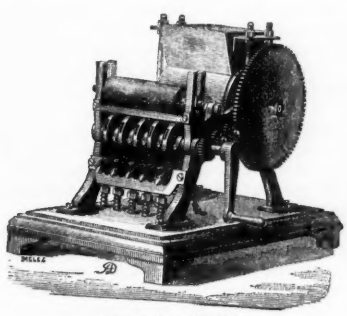
C. SACK, of Berlin, gives some very practical directions for the management of this important class of druggists' sundries, which we copy from the *Monthly Magazine:*

Air and water cushions ought not to be stored in a folded state. The temperature of the room in which they are kept ought to be moderate, not too cold, as the rubber is spoiled by prolonged exposure to cold; the same is done by contact with fatty oil, such as carbolic oil, etc. Small rents in the cushions can be mended. A complete air- and water-tight cushion ought to bear the following test. The cushion in the insufflated state is gradually charged with a heavy weight, which has been placed on a flat board. The weight ought to be in proportion to the size of the cushion, 150 lbs. being sufficient for a cushion of the size of a square foot. The cushion may be declared in order if, after twenty-four hours' pressure, no air has escaped.

Brushes are best kept in tin boxes with tightly-fitting cover; spoiling by moths, etc., is prevented by having a piece of camphor or naphthalin in each box. Originally, all brushes used for surgical purposes, eye, throat, and wound brushes, were made of American feh-hair. But as the latter has risen enormously in price, the manufacturers began to substitute for it the much inferior hair of cats, foxes, bears, etc. So cleverly is the imitation made that even competent eyes are deceived, and that only microscopic examination is able to disclose the deception.



Pill-making Machine.



Pill-printing Machine.

Ice bags are often leaking because they are not treated sufficiently carefully by the public. The ice ought to be crushed into small pieces before filling the bag, to prevent cutting by their sharp edges; the pieces may also previously be dipped into warm water, which will melt away the edges. Customers sometimes complain of leakage of an ice bag, when the moisture observed on its outside is only caused by condensation of water vapors from the surface of the body. Ice bags, before sold, ought to be tested as to their tightness. This is done by insufflating the bag, closing it firmly, and pressing on it from the outside, when the finest leakage will be discoverable by the noise with which the air escapes.

India-rubber goods form a very prominent article in the chemist's shop, and as good appearance and quality depend much on the way in which they are kept, every chemist ought to be well acquainted with the peculiarities and properties of such goods. There are two principal kinds of rubber—hard india-rubber, commonly called vulcanite, and soft india-rubber, of gray, brown, or black color. The former is very durable, whilst the latter is easily spoiled by unsuitable treatment. Soft india-rubber, forming the material for mackintoshes, air and water-cushions, tubing, etc., is regularly adulterated by a smaller or larger quantity of the substitutes for india-rubber. By such admixtures the articles are, of course, made cheaper, but at the expense of elasticity and durability. Superior material, so-called moss rubber, is perfectly free of them, and may be recognized by putting it into water. It will swim in the latter if it consists of genuine moss rubber. Soft india-rubber ought to be kept at a moderate temperature, never below 25°; it becomes hard, brittle, and permanently unfit for use by cold, as likewise by storing it for a certain period, which varies according to the quality of the goods. Superior articles become hard only by keeping for several years. Patent india-rubber may be of black, brown, or gray color, the first two kinds indicating greater elasticity and durability than the latter. Patent india-rubber which, in consequence of long-continued storing, has lost its original lustre, may be restored by rubbing it with some

glycerin. It may be distinguished from the inferior Pará india-rubber by concentric rings, which will appear when the material is drawn into long, thin streaks. The black variety of patent india-rubber is more durable than the red. Pessaries and syringes made of Pará rubber, covered with a very thin layer of patent rubber, are sometimes sold as genuine patent rubber goods. The fraud can only be discovered on tearing the articles into pieces. Newly made patent rubber goods ought not to be exposed to great pressure, as this rubber is sometimes affected by too close packing. They frequently possess a strong odor, caused by sulphurous acid gas, which will disappear rapidly by keeping the articles in the open air. Fresh hollow articles, such as balloons, cushions, etc., have to be insufflated and emptied repeatedly before the odor disappears. Other delicate articles, on which sulphurous acid gas might have an effect, ought to be kept away from patent rubber goods. Handsprays with silk nets, urinals with bandages, and all other articles which consist partly of rubber and partly of tissue, ought to be kept in an imperfectly closed box, as otherwise the evaporating sulphurous acid gas might destroy the tissue, the gas becoming oxidized into sulphuric acid. The articles may also suffer by contact with fats and oils, or by exposure to sunlight.

Inhalation apparatus ought to be turned on to a full flame, as otherwise they frequently fail to act with sufficient power. Stoppages in the two inhalation tubes may readily be removed by blowing through them in the reverse direction. If the tubes and points are not stopped, and the latter are placed very near each other, the apparatus ought to be in good working order. The intact state of the tubes may be proved by detaching them from the apparatus and blowing violently through one tube whilst the other is immersed in water.

Dressing material, especially absorbent cotton wool, derives its value from the white color, from the power of absorption, and from the length of the fibres of the tissue. Absorbent cotton wool with the longest fibres is the most valuable dressing material for surgical purposes. Short-fibred may be distinguished from long-fibred cotton wool by the loose, not compact texture, by being mixed with remnants and waste, and by yielding much dust when shaken. The quality of other dressing material, such as gauze, cambric, etc., is better judged according to the arrangement and number of threads. The price varies accordingly. The threads are counted in a square piece of a certain constant size, and by comparing the number with the one obtained in other cases, judgment of its quality may be arrived at. Gauze bandages vary in value also according to their weight, but the valuation by this method is deceitful in cases where the bandage is impregnated with starch and other chemicals. Dressing material containing iodoform, salicylic acid, carbolic acid, etc., ought from time to time to be controlled with regard to their pretended percentage of chemicals. With iodoform gauze the size of the meshes has also to be taken into consideration; as, for instance, a 20-per cent gauze of wide meshes may contain less iodoform than a 10-per cent gauze of small meshes.

Plaster of Paris bandages ought to be well guarded against cold and damp. If kept in suitable well-closed boxes, they remain perfectly serviceable for at least two years. In using them they must be immersed in warm water for at least two minutes before application.

Tubing may be judged according to color, gray tubing being the most inferior, which may be mixed up with anything but real rubber. Superior tubing, as used for irrigators, clysopompes, sprays, etc., ought not to give way on being stretched from a length of 10 inches to 35 inches. By lifting with it a weight of 60 pounds the tubing ought not to be torn. Cracks are avoided by keeping it in wide circular curves.

Solution of Citrate of Magnesium, and a Proposition for Revision of the Officinal Formula.*

BY LUTHER F. STEVENS, BROOKLYN, N. Y.

EVERY one acquainted with pharmacy knows that there is difficulty with the present officinal process for the medicament above named. The situation is such as only to need the statement without proof, while the consequence has followed that, though many calls for more accurate construction have arisen, the ancient methods still have been copied without change, until every maker, whether small or large in his output, has a private recipe which is thought to work better; and, as an actual industrial fact, this is usually the case. It seems strange that, with this unsatisfactory position in which the whole trade is placed, no one of requisite skill and name to carry weight has cared sufficiently for the cause to probe the matter throughout and disclose not only the reasons of failure, but also a simpler and better way. Some such considerations have led to thought and work such as time could be spared for, and finally to the production of this paper and the experiments and samples spread upon the tables before you by which to prove the various steps.

*From a paper read at the September meeting of the Kings County Pharmaceutical Society.

I speak to-day for the hydro- or acid citrate, or sometimes called bi-basic citrate, stated thus: $MgHC_6H_5O_7$ = 214 when anhydrous, holding still one basic hydrogen which gives it its name and also its medicinal activity, this and one basic Mg attached to the citrate group, minus the water of crystallization contained in the citric acid, and two replaceable hydrogens displaced by dyad Mg.

In a molecular statement, officinal magnesium carbonate aggregates to the rating 484, this bearing 5 Mg, which require 5 citrate molecules, one being contained in each 210 of citric acid.

$4(MgCO_3)Mg(OH)_25H_2O = 484 + 5(H_3C_6H_5O_7H_2O) = 1050 = 5MgHC_6H_5O_7 = 1070$ (when not crystallized) + $4CO_2 = 176 + 16H_2O = 288$ ($10H_2O$ from water of crystallization in the materials, and $6H_2O$ from 6 free O and 12 free H, consequent from the decomposition). Also this salt will always form when citric acid is in excess of above proportion, leaving some free acid, while predominance of Mg, in whatever form held, will produce more or less of the neutral or sesqui or tri-basic salt, $3Mg2C_6H_5O_7 = 450$ rated as anhydrous, or 630 when crystallized. For instance, a solution made containing 23.37 of anhydrous acid salt, to which 10.47 Mg. Carb. (officinal U. S. P.) is added, will in a few days bring the acid salt to 25 of sesqui salt.

The present U. S. P. formula, we all know, produces both of these salts—the sesqui in preponderance—to the waste of good chemicals and great loss in therapeutic effect, while if the 200 grains of carbonate were worked up into this acid salt the result would be 442 grains (anhydrous)—much too great a dose for the purposes and cases in which this inimitable medicament is used.

These matters lead me to the *proposition for revision.*

I think all will agree that the *hydrocitrate* should be the salt arranged for *and produced;* the chemical situation all bears that way. And the next thing is the dosage. Since 1882 I have made my supplies upon the basis explained to-day, stating the molecular structure, as given, in *grains*, and dividing the 5 molecules of hydro-citrate produced (1,070 grains), as held in solution, among *four twelve-ounce bottles*, sweetening, flavoring, and gas charge q. s., giving to each bottle 267.5 grains of the salt (rated still as anhydrous); during this long time none has ever spoiled, though samples have been laid aside for periods of trial; no complaint either as to *effect* or disturbance from lesser or greater "strength" in given lots.

Messrs. Stillé and Maisch state that the officinal preparation cannot be depended upon for constitution or uniformity of action; certainly, such criticism cannot apply when proper chemical balance is secured, for the salt then made is definite and keeps well even with loss of gas charge, does *not* readily crystallize, and if so by accident, is exceedingly soluble either in hot or cold water. In such case, then, all the alchemic rigmarole in process may be done away with, for this is simple and easy; the solution may be allowed to go on at its own pace or be hurried by heat. There need be no *rush* to stopper the bottle until the gas is introduced, and one bottle or ten thousand can be made at one batch, as may suit local needs, without fear of deterioration from keeping. My own directions to friends and others are as follows:

Materials in grains for producing solution of hydrocitrate of magnesium:

	One bottle.	Four bottles.	Twelve bottles
Carbonate Magnesium	121.	484	1452
Acid for the reaction	262.5	1050	3150
" " Potassium Salt	21.	84	252
" in total	283.5	1134	3402
Bicarbonate of Potassium	30	120	360

Salts and other products in the finished and bottled lots, stated in grains:

Hydrocitrate of Magnesium	267.5	1070.	3210.
Citrate of Potassium	30.6	122.4	367.2
Gas as CO_2	13.2	52.8	158.4

For the larger quantity dissolve the carbonate and the acid, each either in fragments or powder, and lemon oil 2 minims or q. s., in a large bottle, with 26 fluidounces of water; filter upon 1 pint of syrup, rinse the filter lightly, and bring to 48 fluidounces (allowing for 5 fluidounces space taken up by the products of decomposition), giving 4 fluidounces of sweetened solution for each bottle; fill with filtered water, add 30 grains bicarbonate of potassium, and immediately stopper tightly.

Others who have used this method and dosage have been as highly pleased as myself, and our committee will be glad to have it tried by as many as possible during the coming winter and spring, by which means to obtain a consensus of opinion for presentation to the future pharmacopœial committee.

In this case, as in many others, the carbonate is the best chemical form to use for reduction; occasionally there is a variation in that which we obtain, occurring, so far as we find, yet more often in foreign than in native brands: hence a test is offered which is convenient to the situation, taking advantage of the formation of neutral salt.

In a test tube or small bottle dissolve 14.5 grains citric acid and 10 grains carbonate of magnesium in powder with 1 fluidounce of water; allow the solution to stand until clear and for escape of CO_2.

The liquid should now be neutral to good test paper; in case it remains acid, then the carbonate is lacking in magnesium, and small portions are to be added gradually until saturation is produced.

Each 1 grain added indicating a loss of 10 per cent, $\frac{1}{10}$ grain = 1 per cent, and in similar ratio, keeping accurate account of the amounts used. The figures are derived from the following table:

Carbonate.	Acid.	Neutral Salt, anhydrous.	Crystallized.
100.	145.	155.	217.
10.	14.5	15.5	21.7
1.	1.45	1.55	2.17

N.B. In very damp weather, powdered carbonate will absorb moisture from the air and materially increase in weight; so, in case of suspicion, dry the sample before testing.

The committee found in three separate blocks of imported carbonate of magnesium a loss extending up to nearly 16 per cent as the greatest, different portions from each block being taken and mingled for an average of that piece.

So far as trials of American brands have been yet made, no variance was found, except one which made the basis of the note upon moisture, and that when dried out was found to be correct.

P.S. Any queries upon matters here spoken of will be cheerfully answered by the committee upon formulæ and revision of the Kings County Pharmaceutical Society, Brooklyn, N. Y.; Wm. P. De Forest, chairman, 397 Classon avenue; or the author of this paper, 40 Willow place.

A New Vehicle for Typewriter's Ink.

VARIOUS formulæ have been published for the preparation of ink for use of typewriting machines, but, as far as I have learned, they have proved more or less unsatisfactory. This has, in great part, arisen from the use of glycerin as one of the prime constituents. The hygroscopic properties of this substance render its use ineligible under varying climatic conditions as to moisture, and the addition of glucose, soap, alcohol, or water does not remove this objection. Vaseline, with or without wax, gives better results in this respect; but a good consistence is not easily secured under extremes of temperature.

Some years ago, when specially interested in the study of inks, I made a number of experiments on a compound suitable for typewriter's use. The results were satisfactory in indicating the line of success, and the notes then made were laid aside until more leisure could be secured for their complete elaboration. Somehow or other that time has not arrived, and, lest another seven years should so elapse, I beg to turn over what little information I have to convey to those who are less busy or perhaps more industrious.

Many of the salts of the aniline series are soluble in castor oil; methyl violet is notably so. I am not prepared to state the limit of solubility, as with a vehicle of such consistence, and with pigments of such intensity, this is a difficult point to determine.

The amount dissolved is, however, relatively great, and advantage can be taken of this fact for the preparation of an ink of remarkable power, admitting of a large number of copies being taken from the same impression. Other anilines, as some of the blues and greens, may be substituted for violet, and the color may be varied, and permanency increased, by the incorporation of a quantity of the finest grade of lampblack. I did not experiment with nigrosin, but it is possible that it would produce a black of some intensity.

The incorporation and solution of the aniline colors in the oil may be accomplished, on the small scale, by triturating the previously powdered color with the oil in a mortar. The use of a little alcohol will sometimes be found to facilitate this operation. The ink may be applied to the ribbon by means of a tooth brush: and the ribbon may be of silk or fine muslin. Strips of very fine "lawn" answer admirably. On a larger scale, the grinding and mixing of the color would of course be better done by revolving rollers, as in some forms of paint or chocolate mills, and the application of the ink to the ribbon could be easily provided for.—PROF. E. B. SHUTTLEWORTH in *Scient. Amer.* (Nov. 9th).

FIG. 1.

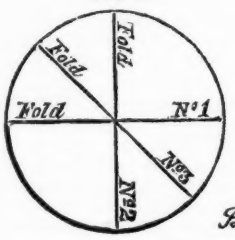


FIG. 2.

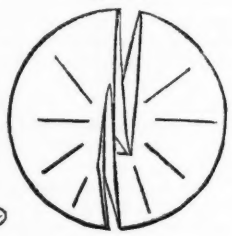


FIG. 3.

FIG. 4.

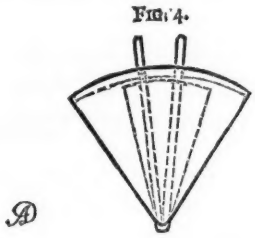
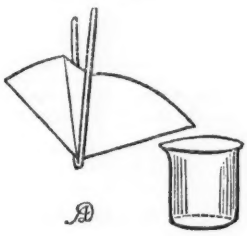


FIG. 5.



RAPID FILTRATION.

THE use of filter pumps, as every chemist is aware, does not, in a very great number of cases, facilitate filtration: first, because a dense layer of the precipitate forms next the paper which continually requires to be removed; and second, if any considerable pressure is used, particles of the precipitate will pass through.

To increase the surface seems to be the better plan. Plaited filters partially effect this, but the precipitate cannot be easily detached from them, and they are troublesome to prepare. Ribbed funnels, while also an improvement, have only one side of the filter for use, the other side being covered with three thicknesses of filter paper.

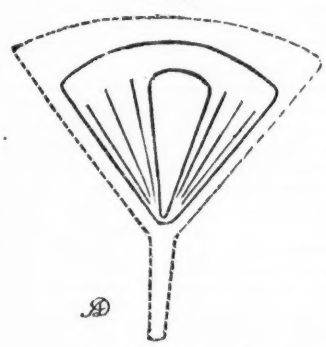
The following method enables filtrations to be made very rapidly, and in such a manner that the precipitate can be readily removed.

The filter paper is folded three times; folds Nos. 1 and 2 are toward the operator, No. 3 from him. The filter is then gathered (Fig. 2), and a piece of glass rod, bent at a very acute angle, inserted in the cleft of the filter (Figs. 3 and 4), thus giving a filtration surface of nearly four times the usual one.

The filtration being complete, the glass rod is grasped by the projecting ends and lifted from the funnel, bearing the filter upon it. One end of the filter paper is then bent down, and the precipitate is easily washed off (Fig. 5).

An improvement on this is to use, instead of the glass rod, a plate of glass (Fig. 6) ribbed on both sides. This renders the filtration very rapid indeed, and if it were made by the manufacturers of chemical apparatus would no doubt be used.—REGINALD A. FESSENDEN in *Chem. News* (August 30th).

FIG. 6.



Fessenden's Rapid Filter.

Chrysarobin in Hæmorrhoids.—Dr. Kossobudsky recommends highly an ointment containing 2½ per cent of chrysarobin (instead of 5 per cent as recommended by Unna), as follows:

Chrysarobin	0.8
Iodoform	0.3
Ext. Belladonna	0.6
Vaseline	15.

If bleeding be present, tannin may be combined with it. It is stated that the use of this ointment twice or thrice daily will cause pain and bleeding to disappear in three or four days.

Purification of Litmus.

DR. OTTO FOERSTER prepares the pure coloring matter of litmus in the following manner:

Commercial litmus of best quality is first extracted by ordinary alcohol in the cold, then digested with water, the solution filtered and evaporated. (This is a combination of the processes proposed by Wartha and Mohr.) The residue is again dissolved in water, the solution filtered, and the filtrate precipitated with absolute alcohol mixed with a little glacial acetic acid. The precipitate is collected upon a filter and washed with alcohol. This causes a violet, fluorescent coloring matter to remain in solution. The remaining residue is once more dissolved in water, and the precipitation, filtration, and washing repeated. At this stage, a red coloring matter, which has a violet tint in an alkaline liquid, remains in solution.

After once again repeating this process, only a small amount of the last-named coloring matter remains in solution. The precipitate upon the filter is then dried, being repeatedly moistened, during the drying, with alcohol, for the purpose of expelling the acetic acid. The precipitate is then again dissolved in water and the solution filtered. Finally the coloring matter is precipitated with alcohol rendered faintly alkaline with ammonia, then collected upon a filter, washed with pure alcohol, and dried.—After *Zeitsch. f. anal. Chem.*, 1889, 428.

Notes on Commercial Drugs, Chemicals, and Essential Oils.

[From the September report of Gehe & Co., of Dresden, and the October report of Schimmel & Co., of Leipzig.*)

Acid, Sclerotic and Sphacelinic.—Both of these substances, which have for some time been regarded as representatives of the oxytocic action of ergot, are greatly falling off in use, and will probably soon cease to be employed. The opinion is gaining ground that the specific effects of ergot depend upon nitrogenous decomposition products of a basic character, which bear some analogy to the ptomaïnes.

Balsam of Peru.—Gehe & Co. reaffirm their former statement that Kremel's proposed method of testing balsam of Peru, by determining what Kremel calls the "acid" number and the "ester" number, is not reliable.

Codeine.—According to Dr. Dornblueth, codeine is a reliable sedative, in maniacal excitement, in doses of ½ to 1 grain. It is best used by way of hypodermic injection of the phosphate of codeine. In the treatment of the morphine habit, it has frequently alleviated the agony caused by enforced abstinence. Since it does not affect the functions of the intestines, it has become a favorite remedy for cough, particularly in phthisical patients.

Cornutine.—This alkaloid, discovered in ergot by Dr. Kobert, is in considerable use among gynecologists. Dr. Thomson, of Dorpat, recently made an extended study of its effects, and found that it is especially effective in atonic hæmorrhage after birth. Unfortunately it is very unstable [in solution] and high in price [1 Gm. is quoted by Gehe & Co. at 40 marks]. Dr. Thomson recommends the following formulæ:

1. Cornutine	¾ grain.
Distilled Water	150 min.
Hydrochloric Acid	4 drops.

Dissolve. Keep in a dark [amber-colored] vial. Dose: 15 minims hypodermically.

2. Cornutine	4 grains.
White Bole	140 "
Glycerin and Water	q. s.

Make 60 pills. Dose: 2 to 3 pills daily.

Creolin.—As might have been expected, the exaggerated laudations of this recently introduced disinfectant have overshot the mark. Experience has shown that it does not possess all the advantageous properties originally assigned to it.

Cubebs.—Gehe & Co. point out the fact (which has been observed in other markets) that most shipments of cubebs represent berries collected at different stages of ripeness. The following four kinds may generally be distinguished:

1. Small, insignificant, strongly shrivelled fruits, scarcely 2 Mm. in diameter, of a grayish-brown to grayish-black color, being in the first stage of ripening. The stem is one and one-half to two times the length of the fruit. The seed is shrivelled and scarcely recognizable.

2. Somewhat larger fruits, of grayish-black color, 4 to 4.5 Mm. large, full of close but not deep (sometimes quite shallow) wrinkles. Stem as long, or one and one-half times as long, as the fruit. The seed is either fully developed—and in this case round and adhering by its base—externally of a brown, internally of yellowish-gray color, appearing horny towards the surface; or it is contracted and of a darker tint.

3. Fruits of a diameter of 5 Mm. and over; stem 5 to 7 Mm. long; color more grayish-brown; wrinkles deeper and not numerous. Seed usually developed, globular, grayish-brown, internally yellowish-white, often mealy, seldom horny.

4. Besides the three kinds here mentioned, most parcels contain from 5 to 10 per cent of yellowish-brown fruits with an easily detachable, corky epidermis. The pericarp is quite friable and does not resist when pressed between the fingers. The seed is not developed, attached to the base in form of a more or less large, shapeless mass. These fruits appear to be genuine cubebs retarded in their development by fungi or unfavorable weather.

These four sorts behave towards concentrated sulphuric acid in the following manner:

Nos. 1, 2, and 4 at once impart a blood-red color to the acid. No. 3 imparts a yellow to yellowish-brown color, which becomes blood-red after one or several hours.

The aqueous decoction of all four sorts yields the starch reaction with iodine. This is most feeble in No. 1. In Nos. 2, 3, and 4 it is of equal intensity.

Not seldom so-called "false cubebs" are found in the parcels. These are characterized by the fact that the seed adheres in all parts to the pericarp. The shape of these fruits varies; they are either round—and in this case usually without stems—or they are more or less pear-shaped and have a stem. For pharmaceutical purposes, the kind described under No. 2 is most to be recommended. But under present circumstances this is not often available, and less desirable grades have to be used.

Hydrogen Peroxide.—The use of this agent, particularly in the arts, as a bleaching and oxidizing material, is steadily increasing. It is, however, necessary that those who use it, or intend to use it, should be instructed as to the best method of employing it. Most complaints which reach the dealer or manufacturer as to its inefficiency may be attributed to faults in manipulation. In general it may be stated that hydrogen peroxide is most effective when in a weakly alkaline solution. Moreover, the commercial article is usually too strong, and needs dilution even as far as 1 per cent. If a solution has been rendered alkaline for use, and if it has not been exhausted by the process for which it has been employed, it may be preserved by slightly supersaturating it with an acid and keeping it in a cool place.

Musk.—The recent invoices of Tonquin musk possess a less penetrating odor than those heretofore shipped. The reason is said to be this, that the musk-deer hunters, owing to the increased demand, no longer wait for the season when the deer descend into the valleys, when they are in rut, at which time the musk has its strongest odor. The hunters now make excursions into the mountains and kill the deer wherever and whenever they can get at them.

Oil of Bay.—Dr. Otto Mittmann has recently made a study of oil of bay, and reports as constituents the following:

1. Terpenes:
   a. Pinen.
   b. Dipenten (very probably).
   c. a Polyterpen (probably Diterpen).
2. Eugenol, as chief constituent.
3. Methylic Ether of Eugenol (a little).

The spec. grav. was found by the author to be 0.970 at 15° C. It forms a clear solution only with ether, petroleum ether, carbon disulphide, and chloroform. With alcohol and glacial acetic acid it forms a turbid solution (*S.*).

Oil of Cinnamon.—In view of the suspicious character of all oil of cassia distilled in China, and the practical impossibility of absolutely controlling its purity, Sch. & Co. recommend that the next Pharmacopœia only recognize the oil of true or Ceylon cinnamon, the physical constants of which are well known, and the purity of which can be readily controlled (*S.*). [It will be well to bear this recommendation in mind for the next U. S. Ph.]

Oil of Citronella.—The frequent adulteration of this oil with certain petroleum distillates has led Schimmel & Co. to make comparative tests of genuine and adulterated oil. It was found that when alcohol of 80 per cent by volume was used as a solvent, the pure oil, as well as that which contained only a small proportion of the adulterant, was easily and largely soluble in the menstruum; but that the solubility decreased rapidly, in proportion to the increase of the adulterant. A mixture of 90 parts of genuine oil with 10 parts of petroleum formed a slightly opalescent liquid when mixed with 5 parts of 80-per-cent alcohol. With 10 parts of the latter the mixture was milky. On mixing them in equal parts, or in the proportion of 3 of oil to 4 of the alcohol, the liquid was clear and solution perfect. In presence of 20 per cent petroleum, milkiness appeared on mixing 1 part of the oil and 5 of the alcohol. With more petroleum, less alcohol was required for the milkiness to appear.

As a general result from their investigations, Schimmel & Co. recommend that oil of citronella of the market should comply with the following requirements:

One part of the oil, when thoroughly agitated with 10 parts of alcohol of 80 per cent by volume, should yield a clear solution.

If the character of cloudiness or milkiness, which will appear with an adulterated oil, is observed, and if it be ascertained whether the undissolved portion will finally settle to the bottom or swim on top, the probable nature of the adulterant may be recognized. Fixed oils will sink to the bottom, petroleum will rise to the top.

In addition to the above requirement, Schimmel & Co. also recommend to demand of the oil a spec. grav. not less than 0.895 at 15° C. (*S.*).

Oil of Cloves.—Oil of clove stems has long been, and is still being, used as a common substitute or adulterant of true oil of cloves. The two oils cannot well be distinguished by the spec. grav., which varies only slightly in the third decimal, but the difference can be recognized, after some practice, by the odor.

Schimmel & Co. state that they consider the spec. grav. given for oil of cloves in the last German Pharmacopœia (II.)—viz., 1.041–1.060—to be too low. Schimmel & Co. find the spec. grav. of oil of cloves to be 1.067 at 15° C., and of oil of clove stems 1.063 at 15° C. They have never seen a genuine oil of cloves with so low a spec. grav. as 1.041. For this reason they recommend that the next Pharmacopœia should require for oil of cloves a spec. grav. not below 1.060.

Oil of Eucalyptus.—Schimmel & Co. report that the oil of *Eucalyptus odorata* contains a copious quantity of eucalyptol and may be used in place of that of *E. globulus*. Its spec. grav. is 0.907 at 15° C. An oil from *E. globulus* distilled in Southern Spain, which came into the hands of

* Notes taken from the latter are distinguisbed by the letter *S* at the end.

Schimmel & Co., contained an unusually high percentage of eucalyptol, besides such a quantity of cineol that the oil congealed to a stiff magma by refrigeration. Its spec. grav. at 15° C. is 0.931. Schimmel & Co. report that the Californian oil of eucalyptus has recently shown such variations in the percentage of eucalyptol that they will no longer have anything to do with it. The fault seems to lie with the producers, who now offer eucalyptol besides the oil, and who probably attempt to sell oil deprived of eucalyptol as unsophisticated. A good oil of eucalyptus should contain between 50 and 70 per cent of eucalyptol (*S.*).

Oil of Juniperus Oxycedrus.—This is the essential oil of the "cade" tree, the same which yields the tarry oil of cade. It is a new Spanish product, resembling pine-needle oil. We mention it here only as it has been used as an "energetic abortive" (*S.*).

Oil of Mirbane.—Schimmel & Co. call attention to the poisonous character of nitrobenzol, which seems occasionally to be overlooked or forgotten. Even the vapor alone, when inhaled for some time, can cause symptoms of poisoning. These symptoms are: a peculiar pallor ("lead-like") of the skin, and a heavy feeling and a sense of cold in the extremities, particularly in the hands and feet. In more severe cases there is unsteadiness in walking, a condition somewhat resembling drunkenness, and inability to stand up, so that the affected person may be falsely supposed to be under the effects of alcohol. The urine has a dark color and an odor of bitter almonds (*S.*).

Oil of Peppermint.—Schimmel & Co., who have, of course, a most lively interest in the statistics of peppermint culture, not only in Europe but also in this and other countries, have obtained, through their confidential agents, an exact account of the extent of the cultivation in Wayne County, New York, and adjoining districts. Their report is accompanied by a map showing the separate townships. The several townships contain the following number of acres under peppermint cultivation:

I. *Wayne County:*

	Acres.		Acres.
Arcadia	874	Huron	89
Lyons	493	Williamson	34
Palmyra	380	Savannah	29
Sodus	335	Macedon	25
Galen	315	Butler	17
Rose	252	Walworth } Wolcott }	10
Marion	204		

II. *Ontario County:*

Phelps	183	Manchester	40

III. *Seneca County:*

Junius.....43

These 3,323 acres are owned by a large number of proprietors. Most of the oil is bought up by commission agents, and their principal aim is to secure the production of those farmers who carry on the cultivation with the best care and keep their fields clear of weeds (*S.*).

Oil of Peppermint, Japanese.—In their last report, Schimmel & Co. stated that there were two "harvests" of peppermint herb in Japan. This was not meant literally, the intention being to say that the herb was "cut" twice, once in September to October, and again in November to December.

While the Japanese heretofore recognized 50 per cent of menthol as a normal quantity which might be demanded to exist in the crude oil, they have now lowered the standard to 30 per cent. [No reason is mentioned. But it is not difficult to guess it.] (*S.*)

Oil of Rose, German.—The cultivation of roses for the production of oil of rose, rose water, etc., in the vicinity of Leipzig has passed the experimental stage. A large tract, comprising 500,000 square meters, has been acquired in the vicinity of the city, and will be stocked with about 250,000 plants during this fall. Up to the present, the cultivation has been carried on at a much smaller scale, but the products were of such superior quality that they readily brought prices far beyond those paid for the same products made elsewhere (*S.*).

Oil of Rose, Turkish.—Schimmel & Co. have determined the average natural percentage of stearopten existing in the oil as distilled in the season of 1889 (in genuine oil). This was found to be 15 per cent.

In 1888 it was 14 per cent, and in 1887, 12 to 13 per cent.

Pure oil of rose of 1889 congeals between 18.5° to 19° C. (65.2° to 66.2° F.), and melts at 19.5° to 20° C. (67° to 68° F.) (*S.*).

Oil of Sandal, East Indian.—Schimmel & Co. have, on a former occasion, recommended that the Pharmacopœia fix the spec. grav. of this oil at 0.970 to 0.975 at 15° C. They have confirmed these figures by further experience (*S.*).

Oil of Thyme.—In their last report, Schimmel & Co. stated that *their own pure* product did not stand the test of the German Pharm. II.—which says that the oil is soluble in half its weight of alcohol, forming a solution which should not be colored yellowish-brown by 1 drop of solution of ferric chloride—but that this test corresponds to an oil deprived of thymol.

Schimmel & Co. now again assert that a *pure, unadulterated oil of thyme*, not deprived of its phenols, when treated with ferric chloride, yields a dirty greenish-brown color, afterwards becoming reddish. The reason is this, that the oil contains, besides thymol, another phenol, which is still under examination and will be reported on later. It is to this second phenol that the color reaction is due.

If oil of thyme is treated with caustic soda solution, and the thymol as well as the other phenol thereby removed, the remaining oil will answer the iron test of the Pharmacopœia, but will no longer deserve the name of "oil of thyme."

It follows that, if a pure oil of thyme is wanted, such an oil should be selected which does *not* answer to the iron reaction of the Ph. Germ. II. (*S.*).

Oil of Wintergreen.—Schimmel & Co. deny the correctness of the results obtained by Messrs. Trimble and Schroeter (reported in abstract, from the *Amer. Jour. of Pharm.*, in our last September number, page 173). These chemists reported that the artificial oil of wintergreen, designated as "a representative sample of the commercial artificial product," contained about 15 per cent of benzoic acid. The authors did not mention the producer's name, but as Schimmel & Co. are the only firm which has imported the artificial oil in the United States, they feel that their product is the article complained of. Schimmel & Co. deny the existence of any benzoic acid in the product. This denial is based (1) on the guaranteed absence of benzoic in the salicylic acid used in the process; (2) on their own investigation, which proved to them that no benzoic acid could be produced during the process of manufacture; (3) on their inability to find any benzoic acid in the artificial oil (*S.*).

Quinine Sulphate.—The new Austrian Pharmacopœia has adopted Kerner's test as modified by Jungfleisch. The amount of water of ammonia (spec. grav. 0.960) has been fixed at 7.5 C.c. (at 15° C.). [The U. S. Ph. directs, at 15° C., 7 C.c. of water of ammonia, and at 16° C. 7.5 C.c.] The above quantity of ammonia corresponds with a purity of 95 to 96 per cent.

Saffron.—The old custom of adulterating saffron does not seem to die out. Gehe & Co. report that they had been offered saffron, by a "respectable house in Spain," which had been deprived of natural coloring matter, then dyed with dinitrocresol, and weighted with inorganic matter. The adulteration was done so neatly that it had at first been entirely overlooked. It is reported that very barefaced adulterations are carried on at Novelda, in the province of Alicante, which sells most of its product to Marseilles houses. The proportion of adulterant is said to have reached 40 per cent. Aside from physical characteristics, determination of ash, etc., a very valuable preliminary test is to treat it with sulphuric acid, whereby a blue tint is produced in presence of most of the usual adulterants.

Simulo.—Attempts have been made in England to cultivate the plant yielding the simulo fruit, *Capparis coriacea* (a species of caper), in hot-houses. The result has not been satisfactory. After three years' careful nursing, the plants are not over ten inches high.

Sodium Dithiosalicylate.—This new salt is recommended as a substitute for the salicylate in acute articular rheumatism, and is said not to produce any secondary symptoms. So far as known, it is the neutral sodium salt of an acid, derived from salicylic acid through the replacement of 2 atoms of hydrogen by 2 atoms of sulphur, in 2 molecules of the acid joined together:

$$\begin{cases} S - C_6H_3 \begin{cases} OH \\ COONa \end{cases} \\ S - C_6H_3 \begin{cases} OH \\ COONa \end{cases} \end{cases}$$

The salt is a yellowish-gray powder of a peculiar aromatic odor, recalling that of iodoform. It is easily soluble in water. On adding a mineral acid to the solution, the acid separates in form of an oily and resinous mass. According to Dr. Lindenborn, the dose amounts to 3–30 grains every three or four hours.

Somnal.—This name designates a new hypnotic, prepared by combining chloral and ethyl-urethane. It is a clear, colorless liquid, easily soluble in alcohol and water. The dose is 45 to 90 grains. [Regarding this substance and certain related products, see No. 2,386 of "Queries and Answers," November number.]

Sugar of Milk.—The North-German product is preferred, according to Gehe & Co., in consequence of its handsome quality and comparatively low price. [We have had occasion to examine an invoice shipped to this country, and can confirm the report of its good quality.]

Tar as a Deodorizer of Iodoform.—Nagel (*Rep. de Pharm.*) says that a mixture of 5 parts of iodoform with 100 parts of tar has no appreciable odor of the former.

Hair Restorative.—*The Lancet-Clinic* says that a solution of chloral hydrate of a strength of 5 grains to the ounce of water will clear the hair of dandruff, and in many cases of baldness will cause a renewal of growth of hair[?].

Arnica oil, well rubbed into the scalp, in small quantity, three times a week, will also be beneficial in the latter class of cases.

Ticket Writers' Ink.—To 1 gill of black ink add ½ ounce of gum. Let it stand in a warm place, and shake it frequently. When dissolved, if too thick, add more ink; if too thin, more gum. It will produce a fine glossy letter. You may treat blue, or red, or other colored ink in the same way with an equally satisfactory result.

Ink for Writing on Photographs.—The following formula produces an ink serviceable for marking proofs; the writing being executed on a dark portion, the lines soon bleach by the conversion of the silver into an iodide:

Iodide of Potassium	10 parts.
Water	30 "
Iodine	1 part.
Gum	1 "

Arecoline.—Arecoline is the name given by Jahns to an alkaloid which he discovered in areca nuts, and which Marmé regards as the tænicidal principle of the nut. Zimmer & Co. offer it in form of hydrobromate of arecoline, in handsome crystals.

Detection of Chicory in Coffee.—M. Baumert founds his process on the excess of chlorine in chicory, which is nine times greater than in coffee. He incinerated 25 Gm. of genuine coffee, treated the ash with an alkali, and lixiviated it with water slightly acidified with nitric acid. The liquid required 7.5 C.c. of normal silver nitrate. The same quantity of chicory requires 70 C.c. of the solution (1 C.c. represents 1 Mg. of chlorine).—*J. d. Ph. de Lorraine.*

The Currant Crop of Greece.—Last year the growing crop of currants in Greece reached a total of 150,000 tons. Just this quantity has been shipped up to the present (July, 1889), and about 8,500 tons are still remaining, most of it, however, of very inferior quality, fit only for the local distilleries. Thus the total crop has proved to be 158,500 tons, or the largest by about 30,000 tons ever produced.

The direct shipments to the United States from the crop of 1887 were 13,037 tons, but, notwithstanding the very plentiful supply, the consumption in the States has not increased.—*U. S. Cons. Reports.*

Chelidonium Alkaloids.—This was one of the subjects brought before the late meeting of German Naturalists (Department of Pharmacy) by Prof. Ernst Schmidt.

Chelidonium root contains chelerythrin, chelidonine, and nearly a dozen more of alkaloids. The composition of chelerythrin is still unknown; that of chelidonine is $C_{20}H_{18}NO_5.H_2O$. Another alkaloid is *protopine*, of which it is as yet undecided whether it contains 20 or 21 atoms of carbon. Protopine has also been found in Sanguinaria Canadensis, Eschscholtzia Californica, and a few other plants. It has been asserted that the last-named one (Eschscholtzia) contains morphine, but this is denied by the author. The error was caused by the fact that the physiological effects of protopine resemble those of morphine. The chelidonium alkaloids, in general, possess more or less of the physiological effects of morphine.—*Chem. Centralbl.*

Atropine and Hyoscyamine.—Prof. Ernst Schmidt reported at the late meeting of German Naturalists that he has investigated the claim made by E. Schering's chemists, who announced that belladonna did not contain any atropine originally, but only hyoscyamine. He finds that older belladonna roots contain only hyoscyamine, but that fresh ones actually contain pre-existing atropine.—*Chem. Centralbl.*

Avalte.—At Avala, near Belgrade, Servia, quicksilver is abundant in conjunction with a green-colored mineral named avalite, the properties of which are still unknown. It is hoped that, amongst other uses, it may be found possible to apply it as a substitute for arsenic as a coloring body, in which event the discovery will prove very valuable, as avalite is said to be free from the poisonous qualities which make the employment of arsenic so dangerous. The mine was discovered by Professor Klerics, of Belgrade.

The Harmlessness of Creolin.—An interesting case of creolin poisoning happened the other day at Berlin. A laborer, employed in a chemical factory, with the intent to commit suicide, swallowed not less than eight ounces of creolin. Dr. von Ackeren, who published a detailed report on the case, observed only very slight and passing symptoms of poisoning, whilst the patient perfectly recovered. The fact that a dose of eight ounces was not sufficiently toxical speaks greatly in favor of creolin, which, though a powerful disinfectant, is comparatively harmless to the human organism. If we consider that the tenth part of carbolic acid would have proved fatal to the man, we cannot deny that it is of great advantage to possess non-poisonous antiseptics like creolin.

The Dose of Chloralamide.—The results of experiments by Dr. Lettow respecting the therapeutic use of chloralamide are said by him to be:

1. Chloralamide is a very efficacious and useful hypnotic, though it is no panacea for all cases of insomnia.
2. The greatest advantage over other hypnotics consists in its having no influence whatever on pulse, respiration, or temperature.
3. After-effects are very scarce, if occurring at all; they consist of slight headache or a trace of giddiness.
4. The safe dose for an adult is 45 grains.
5. The drug is best given one to one and one-half hours before the desired sleep is intended to commence.
6. Chloralamide when given as an enema is very reliable.
7. The hypnotic effect is occasionally prolonged over part of the following day.—*Provincial Med. Journal.*

Label Paste.—While making flour paste one day it occurred to Mr. Patton that, by converting part of the starch of the flour into dextrin by the action of an acid, he might improve its adhesiveness. Accordingly, he added some hydrochloric acid, and the result was better than anticipated. The product was a very white, smooth paste. With this paste he found no difficulty in attaching labels to tin or other smooth surfaces. The following is the formula:

Wheat Flour	1 lb.
Alum	℥ ij.
Borax	℥ ij.
Hydrochloric Acid	℥ iss.
Water	℥ xvj.

Mix the flour, alum, and borax, and stir to a smooth paste with the water; then add the acid and heat until the starch cells break, stirring constantly.

This makes a very thick paste, which must be thinned with water as wanted for use. A small quantity of essence of wintergreen poured over the paste in stock will preserve it indefinitely.

Castor-oil Chocolate.—As a means of making castor oil palatable, Mr. Giraud recommends its incorporation with chocolate. This is done by working into a mass, on a warm plate, 50 parts of cacao powder freed from oil, 50 parts of castor oil, 100 parts of powdered sugar, and vanilla sufficient for flavoring. The product may then be formed into tablets or pastilles. It will be seen that the castor oil is here made to take the place of the removed cacao fat. About 10 Gm. of the compound is a sufficient dose for a child.—*Pharm. Jour.*, from *Pharm. Zeitung.*

Oil of Cedar.—According to a note in the *Garden and Forest*, the distillation of oil of cedar (*Juniperus Virginiana*), which has long been carried on in the pencil mills at Cedar Keys, in Florida, from sawdust and wood of inferior quality unsuitable for pencil-making, is likely to be carried on in other States, since straight-grained timber, suitable for pencil-making, is becoming scarce in Florida and along the streams of the western coast, where the best used to be found.

Turpentine baths recommended for rheumatism, etc., are, according to Pinkney (*D. Med. Ztg.*), best prepared in the following way: A highly concentrated solution of soft soap is thoroughly agitated with 3 to 4 ounces of turpentine. This emulsion is put into the bath, and, on opening the water tap, it is gradually and thoroughly mixed with hot water.

Pharmacology of the Iodides of Potassium and Sodium.—Dr. Gay, who has been studying this question, has formed the following conclusions: (1) The iodides of potassium and sodium of commerce are generally impure; the druggist should be very careful to examine these drugs, and to reject all containing less than 95 per cent of iodide, or which contain iodate. [These strictures regarding the purity of iodides do not apply to the same extent to our market.—Ed. Am. Drugg.] (2) The iodide of sodium has always a weaker percentage, from 80 to 85 per cent; the dried iodide is not purer than the crystallized; medical men should allow for these facts in their prescriptions. This salt, which is very hygrometric and difficult of manufacture, would perhaps be better abandoned. (3) The iodide of potassium may be obtained pure at a reasonable price, and its preparation is one which pharmaceutists might undertake for themselves. The preference given to iodide of sodium by some physicians is not justifiable.—*Gaz. Hebdom. de Montpellier.*

The American Academy of Medicine is endeavoring to make as complete a list as possible of the alumni of literary colleges, in the United States and Canada, who have received the degree of M.D. All recipients of both degrees, literary and medical, are requested to forward their names, at once, to Dr. R. J. Dunglison, Secretary, 814 N. 16th Street, Philadelphia, Pa.

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EDITORIAL.

THE completion of eighteen years of its publication affords the editors of the AMERICAN DRUGGIST occasion for thanking its patrons for their liberal support and encouragement, and for a renewal of assurances that the policy of the journal will continue to be the greatest good for the greatest number.

EARLY in the history of the journal it advocated the organization of the profession of pharmacy for the mutual advantage of pharmacists, and for a number of years a considerable amount of space was given in the body of the journal to the reports of transactions of the associations which were established. The rapid increase in the number of such organizations has, however, rendered it impossible to keep up the department devoted to association news without reducing very considerably the space which it seemed desirable to give to the corresponding increase in the amount of scientific materials at hand. Moreover, the establishment of numerous pharmaceutical journals devoted to the promotion of local interests, and, among others, the development of local associations, has in a measure relieved us of the necessity for making this journal so largely a newspaper as would otherwise have been the case. The editors have, therefore, been the more willing to make association and personal notes subordinate to scientific intelligence.

ESPECIAL pains are taken to publish only that which is reliable and susceptible of being made practically useful in the daily work of pharmacists. In furtherance of this design, the material selected has covered as wide a range as is consistent with the province of a pharmaceutical periodical, and it is believed that its pages will show that, from the beginner in pharmacy to the specialist in pharmaceutical chemistry and pharmacology, no one class has been favored more than another.

IN the matter of illustrations, no pharmaceutical periodical in existence has given its readers so numerous or elaborate engravings; about one hundred and fifty having appeared in this volume. The AMERICAN DRUGGIST was the first to give any considerable attention to matters of art and taste as applied to the construction, decoration, and furnishing of the pharmacist's place of business. Several papers on this subject, illustrated, as in previous volumes, with the work of excellent artists, have appeared during the past year, and the series will be continued as occasion and materials are met with.

IN the line of elementary studies and work of the drug clerk will be found the series of papers on the Art of Dispensing. These will be continued in the next volume, and will afford the apprentice in pharmacy a knowledge of the most approved methods of the day.

IN the matter of Original Communications, we have published several papers of great value, and while no special effort has been made to secure materials of this character, the editors are glad to receive communications relating to all matters allied to pharmacy. It must be understood, however, that communications for original publication in the AMERICAN DRUGGIST must be sent to it alone, if it is desired that they shall appear in full; otherwise the editors will exercise their prerogative of eliminating all portions not of primary importance.

THE department of Queries and Answers represents no inconsiderable amount of labor; but so long as our correspondents confine their inquiries to matters of more or less general interest we shall always be glad to hear from them, and will do the best we can to make rough places smooth.

WISHING you all a Merry Christmas, and that the New Year may be one of happiness and prosperity, we bring our labors on this volume to a close.

WE are indebted to Mr. Eugene Spangenberg, of Olin, Ohio, for the following bit of quaint humor showing that the art of raising the wind is not a modern accomplishment so far as the clergy are concerned:

"A paper printed in Krausenburg, Austria, on the occasion of the recent celebration of the centenary of Cardinal Haynald, relates the following story on the authority of one well acquainted with those who know the reverend gentleman and were familiar with the circumstances.

Haynald, Bishop of Siebenburgen, stopped, on his return from a confirmation tour, at a small place named Torda, and being detained a day longer than was expected, his secretary, Lonhart, found to his dismay that they had not enough money to pay the hotel bill. Now a bishop cannot very well run away without paying what he owes, nor does his sense of dignity permit him to plead even temporary pecuniary embarrassment. Still, the bishop managed to avoid either dilemma. He sent a waiter to the apothecary of the place, a Mr. Gabriel, with whom his Grace was acquainted, with the following recipe, which has since been preserved by the several successive proprietors of the establishment:

℞ *Notam austriacam*
Numero
Ducenta
D. S.—For one day's use only.

DR. HAYNALD.

The druggist's clerk, being somewhat rattled by the sudden interruption of his sleep, tried in vain to understand the nature of the prescription, and after fruitless consultation of his works of reference, wakened his employer, who, after reading the recipe, sent his clerk again to bed, and said he would himself prepare the prescription. He put 200 guilders in notes into a powder box, duly sealed, labelled, and inscribed, and sent it to the bishop, saying to the messenger that in case the powder should not be sufficient he would be glad to send a second dose. This, however, was not necessary, and the first dose, after "one day's use only," was returned with thanks.

The next meeting of the North Dakota Board of Pharmacy will be held at Grand Forks, N. D., on the 6th day of January, 1890. All persons desiring to come before the Board at that meeting will apply for blanks to the secretary, Frank Frisby, Bismarck, Dak.

The Section on Commercial Interests of the American Pharmaceutical Association desires to receive from the various Pharmaceutical Associations, both State and local, all reports upon matters relating to commercial interests, and would be pleased to hear from committees on trade interests upon any matters relating to trade topics, reports, circulars, etc., to be sent to the secretary of the section, F. B. Kilmer, New Brunswick, N. J.

QUERIES & ANSWERS.

Queries for which answers are desired, must be received by the 5th of the month, and must in every case be accompanied by the name and address of the writer, for the information of the editor, but not for publication.

No. 2,392.—**Prescription Difficulty** (Binghamton).

We are asked how the following prescription should be prepared:

℞ Acidi Arseniosi..... .....gr. i.
Tr. Ferri Chlor..... ℥ iv.
Glycerini .... ℥ iss.
Aquæ.....q. s. ad ℥ iv.
M. S. A teaspoonful in water after each meal.

We would recommend the following way: Reduce a small quantity of arsenious acid to a very fine powder, weigh out 1 grain, place it in a small flask or large test tube together with ½ fl. oz. of water, and boil briskly for about five minutes. The acid will probably not all be dissolved. Now add about 10 drops of hydrochloric acid, and boil again, when solution will rapidly take place. Cool off the liquid, add it to the glycerin, add enough water to make 3½ fl. oz., and lastly add the tincture of iron.

Do not boil the arsenious acid with strong hydrochloric acid, and then dilute with water. This will cause loss of arsenic, part of which will be volatilized as arsenious chloride. The same would happen if you were to attempt to dissolve the arsenious acid in the tincture of iron by heat, particularly if the latter, as usual, contained free hydrochloric acid.

No. 2,393.—**Compound Quinine Tincture (Loomis)** (A. McC., Hartford, Conn.).

Tinctura Quininæ Co. (Loomis), as given in the formulary of the hospitals under the Commission of Public Charities and Correction of this city, is:

Quininæ Sulphatis... ....gr. 16.
Tinct. Aurantii Dulcis..... ....f℥ 2.
Dissolve.

No. 2,394.—**Cold Cream** (H. M.).

By following the formula of the U. S. Ph. for Unguentum Rosæ, a very handsome "cold cream" will be obtained.

Another formula is given here (after Cristiani):

Beune Oil.....12 oz.
Rose Water, triple..... 8 "
Spermaceti.... ..... 4 "
White Wax..... 2 "
Oil of Rose.....20 drops.

Melt the wax and spermaceti with the oil in a porcelain vessel, which should not be too shallow. When melted, place the rose water where it can run very slowly into the paste; keep stirring until it is thoroughly mixed, then add the oil of rose, and transfer it to suitable porcelain jars.

The stirring may with advantage be done with a quirl, or, when larger quantities are to be prepared, with some form of egg-beater.

No. 2,395.—**Chloralamide** (B. and J.).

Our correspondents will find several brief notes on this new hypnotic in our last issues. In addition, we place here a translation of the note on chloralamide contained in the new (4th) edition of Fischer's "Die neueren Arzneimittel."

Chloralamidum (Chloralamid, Chloralformamid). Under this name, the "Chemische Fabrik auf Aktien," formerly E. Schering, of Berlin, puts a preparation upon the market, which has been tested upon the suggestion of Prof. Mering, and has been recommended as a hypnotic by Reichmann, Hagen, and Huefler. The name "chloralamide" is not well chosen. Certainly no chemist would suspect that the substance denoted by it is a combination of chloral with formamide.

Chloral shares with all aldehydes the property of forming addition-products. Thus, it may add to itself water and ammonia:

$$CCl_3C\begin{cases}H\\O\end{cases} + H_2O = CCl_3C\begin{cases}OH\\H\\OH\end{cases}$$

chloral — water — chloral-hydrate

$$CCl_3C\begin{cases}H\\O\end{cases} + NH_3 = CCl_3C\begin{cases}OH\\H\\NH_2\end{cases}$$

chloral — ammonia — chloral-ammonia

Jacobsen has, moreover, shown that chloral combines not only with ammonia, but in general with primary derivatives of ammonia, with amides and amines, by simple addition. Thus he prepared chloral-acetamide by acting with acetamide upon chloral.

$$CCl_3C\begin{cases}H\\O\end{cases} + \begin{cases}H\\NHCH_3CO\end{cases} = CCl_3C\begin{cases}OH\\H\\NHCH_3CO\end{cases}$$

chloral — acetamide — chloral-acetamide

Now, the so-called "chloralamide" is the corresponding compound obtained from chloral and formamide.

Regarding the actual preparation of the new compound, which had not previously been described, nothing has been published. (A patent has been applied for.) Nevertheless, it is most probable that it is prepared by mixing molecular weights of anhydrous chloral (*not* chloral-hydrate) and formamide.

$$CCl_3C\begin{cases}H\\O\end{cases} + \begin{cases}H\\NHHCO\end{cases} = CCl_3C\begin{cases}OH\\H\\NHHCO\end{cases}$$

chloral — formamide — "chloralamide."

According to this constitution, the compound should preferably have been called "chloralum formamidatum." This name would have had the advantage of being based on analogy, since we [meaning Europe, and especially Germany] designate a compound of chloral and water as "chloralum hydratum," and a compound of chloral and alcohol, "chloralum alcoholatum."

The so-called chloralamide forms shining, white crystals, which have a slightly bitter taste. It melts at 115° C., and when distilled splits up into its component bodies. It is slowly soluble in about 10 parts of cold water and in 1.5 parts of alcohol. It is more readily soluble in hot water, but the temperature must not exceed 60° C. (140° F.), since otherwise the compound is decomposed into chloral and formamide (or ammonium formate). This same decomposition is brought about with the greatest ease by the action of alkalies, while acids have no effect upon it.

It is probable that chloralamide is split up, by the alkali of the blood, into the components before mentioned, and that its hypnotic action is based upon this. It is said to possess certain advantages over chloral, particularly that it is without influence upon respiration and the action of the heart, that it does not diminish blood pressure, and does not affect digestion.

The hypnotic dose is 15 to 45 grains.

Considering that the compound contains 76.6% of chloral, the greatest single dose would have to be fixed at 60 grains, and the largest daily dose at 120 grains.

BIBLIOGRAPHY.

THE PRACTICE OF PHARMACY. A Treatise on the Modes of Making and Dispensing Officinal, Unofficinal and Extemporaneous Preparations, etc. *Second Edition*, enlarged and thoroughly revised. By JOSEPH P. REMINGTON, Ph.M., F.C.S., etc. 8vo. Philadelphia, 1889, J. B. Lippincott Company.

We have not reprinted the whole title of this work, but only the essential features, for it is so well known that the first four words alone would be sufficient to particularize it. The new edition before us bears ample evidence of careful revision throughout. Among the most notable improvements is a copious enlargement of the chapter on Magistral Pharmacy, both in text and illustrations. Under the head of Prescriptions, we find 30 pages devoted to the reproduction of 100 actual prescriptions, selected as typical either of some fault, error, carelessness, or of some other peculiarity likely to bother a novice, with full commentary on the features which are objectionable or require special explanation for other reasons. The collection of formulæ at the end has been enlarged by the incorporation of the National Formulary. A new chapter has been inserted in Part I. showing the application of the arithmetical process of alligation to pharmaceutical problems. This is certainly of great utility. The chapters on pharmacopœial substances and preparations are followed by a judiciously selected series of questions covering the subjects taught.

Altogether the work has been brought up to our present state of progress in pharmaceutical art and knowledge, and forms one of the books which no practising pharmacist can do without.

PROCEEDINGS of the Twelfth Annual Meeting of the Kentucky Pharmaceutical Association, held at Crab Orchard, Ky., May 15th and 16th, 1889. An interesting pamphlet of 96 pages.

PROCEEDINGS of the Pennsylvania Pharmaceutical Association at its Twelfth Annual Meeting, held at Scranton, June 4th and 5th, 1889, pp. 164, 8vo.

REPORT of the Jacksonville Auxiliary Sanitary Association of Jacksonville, Fla., covering the work of the Association during the Yellow Fever Epidemic, 1888. Edited by CHARLES S. ADAMS. Published under the supervision of the Executive Committee of the Association.

A pamphlet of over 350 pages, which contains nothing of value and the cost of which had been better expended in preventing another epidemic.

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BARKER. Handbook of Physiology, 220
BASTIAN. College Botany, 140
BILLINGTON & O'DWYER. Diphtheria and Intubation, 160
BINET. The Psychic Life of Micro-organisms (McCormack), 140
BOWEN. Handbook of Materia Medica, Pharmacy, and Therapeutics, 60
BUCK. Manual of the Diseases of the Ear, 220
Chemists' and Druggists' Diary, 60
CHRISTY. New Commercial Plants and Drugs, No. 11, 140
DAY. Mineral Resources of the United States, 60
DYMOCK. Pharmacographia Indica, 220
FARQUHARSON. Guide to Therapeutics and Materia Medica (Woodbury), 140
LEONARD. 193 Illustrations. The vest pocket Anatomist, 60
LESCHER. Recent Materia Medica, 60
MERCK'S Index, 140
PETERS. Pictorial History of Ancient Pharmacy (Netter), 60
REMINGTON. Practice of Pharmacy, 232
Reports, Proceedings, Pamphlets, 60
RINGER. Handbook of Therapeutics, 160
ROOSA. The Old Hospital and other Papers, 160
SADTLER. The Debt of Medical and Sanitary Science to Synthetic Chemistry, 160
SCHAER. Ueber die Verbreitung chemischer Verbindungen in der Pflanzenwelt, 220
SMART. Handbook for the Hospital Corps of the U. S. Army and State Military Forces, 160
STEWART. Clinical Lectures on Albuminuria, 60
ST. JOHN. Postal Dictionary, 140
WETHERSTEIN. International Pocket Medical Formulary, 140
WOOD. The Dispensatory of the United States of America, xvi. ed., 49
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